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10/724,605	12/02/2003	Masaki Tokioka	03500.017806	3712

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EXAMINER	
ROSSI, JESSICA	
ART UNIT	PAPER NUMBER
1733	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/19/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/724,605	TOKIOKA ET AL.	
	Examiner	Art Unit	
	Jessica L. Rossi	1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10/6/06, RCE*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *13-18 and 20-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *13-18 and 20-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

RCE

1. The request filed on 10/6/06 for a RCE under 37 CFR 1.114 based on parent Application No. 10/724,605 is acceptable and a RCE has been established. An action on the RCE follows.

Response to Amendment

2. This action is in response to the amendment filed on 10/6/06. Claims 1-11 and 19 were cancelled. Claims 13-18 and 20-24 are pending.

Claim Objections

3. Claim 20 is objected to because of the following informalities:

Claim 20, line 12: "can performing bonding" should be --can perform bonding--.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 13-18 and 20-24 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

With respect to claims 20 and 21, the specification does not have support for heating the member at a temperature equal to 130°C nor does it have support for heating the member at a

temperature equal to a temperature at which the seal bonding material can perform bonding. The specification at p. 36, line 14 – p. 37, line 7 discloses that the seal bonding material performs bonding at a temperature of 130°C or higher and therefore the container/member is not heated to a degree sufficient for the seal bonding material to perform bonding by heating of the container/member alone; thus, the container/member is heated to about 100°C or in the range of 90-110°C.

Therefore, since the specification teaches away from heating the member at a temperature at which the seal bonding material can perform bonding, the specification clearly does not have support for heating the member at a temperature equal to 130°C or heating the member at a temperature equal to the temperature at which the seal bonding material can perform bonding.

Regarding claim 23, the specification does not have support for heating the member to a temperature that is higher than 90°C because the phrase "higher than" has no upper limit and causes the claim to read literally on embodiments outside the 90-110°C range, as disclosed on p. 37, lines 1-7, of the specification (see MPEP 2163.05, "Range Limitations").

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 13-18 and 20-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claims 20 and 21, it is unclear as to what Applicant intends by heating the member at a temperature lower than 130°C and lower than a temperature at which the seal bonding material can perform bonding. According to the specification, the temperature at which

the seal bonding material can perform bonding is 130°C. Therefore, the present claim seems redundant. It is suggested that Applicant rewrite the claim to state, "heating the member at a temperature lower than 130°C, which is a temperature at which the seal bonding material can perform bonding," to clarify this issue.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 13-18 and 20-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vrijssen (US 4710673) in view of Veerasamy (US 6365242, of record).

With respect to claim 21, Vrijssen teaches a method of manufacturing an airtight container by setting a member (2 or 7) for defining an airtight space together with a substrate (2 or 7) to abut on the substrate (Figures 2 or 3). The reference supplies a seal bonding material (9) of indium or indium alloy to a corner portion formed by the substrate and the member or to a portion to be the corner portion formed in the setting step (abstract; column 3, lines 52-53). After the setting step, the reference locally heats the seal bonding material to a temperature equal to or higher than a temperature at which the seal bonding material can perform bonding (Figure 3; column 3, lines 27-56). The heated seal bonding material is then cured to airtight bond the substrate and member with the seal bonding material to form a closed bonding line (column 4, lines 1-4).

As a result of locally heating the seal bonding material, the temperature of the member/substrate (2) does not rise as much as in prior art methods and therefore the temperature of the member/substrate (2) remains relatively low (column 2, lines 40-45; column 4, lines 4-8). Therefore, one reading the reference would have appreciated that locally heating the seal bonding material results in conductive, or indirect, heating of the member/substrate (2).

Since it is well known in the airtight container art that indium and indium alloy perform bonding at temperatures less than or equal to 130°C (Veerasamy at column 6, lines 40-65 and column 8, lines 5-9), it would have been obvious to locally heat the seal bonding material of Vrijssen at a temperature less than or equal to 130°C and therefore indirectly heat the member/substrate (2) at a temperature equal to or lower than 130°C, while locally heating the seal bonding material, because such low processing temperatures make for a more efficient process.

One having ordinary skill in the art would have also appreciated that locally heating the seal bonding material would also result in conductive, or indirect, heating of the member/substrate (7). Therefore, the reference also teaches heating the member/substrate (7) at a temperature equal to or lower than 130°C and equal to or lower than a temperature at which the seal bonding material can perform bonding, while locally heating the seal bonding material.

With respect to claim 20, it is noted that the airtight container of Vrijssen is an image display apparatus for containing display devices (column 1, lines 4-5).

10. Claims 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haven et al. (US 2235681, of record) in view of the collective teachings of Wang et al. (US 6444281, of record) and Veerasamy.

With respect to claim 21, Haven teaches a method of manufacturing an airtight container by setting a metal member (29) for defining an airtight space together with a substrate (34) to abut on the substrate. The reference supplies a seal bonding material (91) of lower melting point metal to a corner portion formed by the substrate and the member or to a portion to be the corner portion formed in the setting step (Figures 18-19). After the setting step, the reference locally heats the seal bonding material to a temperature equal to or higher than a temperature at which the seal bonding material can perform bonding (209°F = 98°C; p. 5, right column, lines 1-3; p. 6, left column, lines 1-22). The heated seal bonding material is then cured to airtight bond the substrate and member with the seal bonding material to form a closed bonding line (p. 6, left column, lines 39-45).

One reading the reference as a whole would have appreciated that locally heating the seal bonding material results in conductive, or indirect, heating of the metal member (29) (p. 6, left column, lines 5-22). Therefore, since the reference locally heats the seal bonding material to 98°C (p. 5, right column, lines 1-3), which is a temperature at which the seal bonding material can perform bonding, the reference teaches heating the member (29) at a temperature equal to or lower than 130°C and equal to or lower than a temperature at which the seal bonding material can perform bonding, while locally heating the seal bonding material.

Haven teaches that a number of variations of low melting point metal can be used for the seal bonding material (p. 4, column 2, lines 61-62; p. 5, column 1, lines 69-75). Therefore, it would have been obvious to one having ordinary skill in the art to use indium or indium alloy because its use as a seal bonding material for forming a hermetic seal around the periphery of an airtight container is well known in the art, as taught by the collective teachings of Wang (column

3, lines 48-65) and Veerasamy (column 6, lines 40-65), where such a seal bonding material requires low processing temperatures (Veerasamy; column 2, lines 65-67; column 8, lines 5-9).

Regarding claims 22-23, Haven in view of Veerasamy teaches such.

11. Claims 13-18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haven et al. and the collective teachings of Wang et al. and Veerasamy as applied to claim 21 above, and further in view of the collective teachings of Misonou (US 2002/0064610, of record) and Minnaai et al. (US 6309733, of record).

With respect to claim 20, it would have been obvious to use the airtight container of Haven as a image display apparatus because it is known to make airtight containers that can be used as an insulated window or an image display apparatus using the same process where the periphery of the container is hermetically sealed by a seal bonding material, as taught by the collective teachings of Misonou (sections [0043, 0077]) and Minaai (column 4, lines 51-57; column 8, lines 61-64; column 9, lines 13-18).

Regarding claims 13-18, Applicant is directed to paragraphs 11-13 of the non-final office action dated 12/28/05.

12. Claims 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang et al. '281 in view of Wang et al..(US 6635321, of record) and further in view of Veerasamy.

With respect to claim 21, Wang '281 teaches a method of manufacturing an airtight container by setting a member (5) for defining an airtight space together with a substrate (3) to abut on the substrate (Figure 4). The reference supplies a seal bonding material (21) of indium or indium alloy to a corner portion formed by the substrate and the member or to a portion to be the corner portion formed in the setting step (column 3, lines 48-65). After the setting step, the

reference heats the seal bonding material to a temperature equal to or higher than a temperature at which the seal bonding material can perform bonding (column 4, lines 44-47). The heated seal bonding material is then cured to airtight bond the substrate and member with the seal bonding material to form a closed bonding line. It is unclear as to whether the reference teaches locally heating the seal bonding material.

It is known in the art of making airtight containers to hermetically seal the periphery of the container using a seal bonding material, such as indium, where the seal bonding material is locally heated to reduce processing time and the need for expensive manufacturing equipment, as taught by Wang '321 (Figure 6c; column 3, lines 20-24; column 7, line 66 – column 8, line 6; column 8, lines 17-54). Wang '321 also teaches that during local heating of the seal bonding material, the end portions of the members/substrates that are in close proximity to the seal bonding material are also heated to a temperature equal to or lower than that of the seal bonding material (column 7, lines 5-16 and 55-63).

Therefore, it would have been obvious to one having ordinary skill in the art to locally heat the seal bonding material of Wang '281 to a temperature equal to or higher than a temperature at which the seal bonding material can perform bonding because such is known in the art, as taught by Wang '321, where locally heating the seal bonding material reduces processing time and the need for expensive manufacturing equipment. Furthermore, one would have readily appreciated that the member of Wang '281, which is in close proximity to the seal bonding material, would also be heated to a temperature equal to or lower than that of the seal bonding material, while locally heating the seal bonding material.

Since it is well known in the airtight container art that indium and indium alloy perform bonding at temperatures less than or equal to 130°C (Veerasamy at column 6, lines 40-65 and column 8, lines 5-9), it would have been obvious to locally heat the seal bonding material of Wang '281 at a temperature less than or equal to 130°C and therefore heat the member at a temperature equal to or lower than 130°C, while locally heating the seal bonding material, because such low processing temperatures make for a more efficient process.

Regarding claims 22-23, Wang '281 in view of Veerasamy teaches such.

Regarding claim 24, Wang '321 teaches heating the entire container while locally heating the seal bonding material because this prevents thermal shock during the local heating step (column 9, lines 13-25). Therefore, it would have been obvious to heat the member of Wang '281 by heating the entire airtight container during the local heating step because this prevents thermal shock.

13. Claims 13-18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang '281, Wang '321 and Veerasamy as applied to claim 21 above, and further in view of the collective teachings of Misonou and Minnaai et al.

With respect to claim 20, it would have been obvious to use the airtight container of Wang '281 as a image display apparatus because it is known to make airtight containers that can be used as an insulated window or an image display apparatus using the same process where the periphery of the container is hermetically sealed by a seal bonding material, as taught by the collective teachings of Misonou (sections [0043, 0077]) and Minaai (column 4, lines 51-57; column 8, lines 61-64; column 9, lines 13-18).

Regarding claims 13-18, Applicant is directed to paragraph 19 of the previous office action.

Response to Arguments

14. Applicant's arguments with respect to claims 20-21 have been considered but are moot in view of the new ground(s) of rejection. However, the examiner would like to address Applicant's remark with respect to the Haven reference made on p. 13 of the Arguments.

Applicant argues that Haven heats the bonding material but not the member. The examiner invites Applicant to carefully reread the rejection set forth in paragraph 10 above. To reiterate, one reading Haven would have readily appreciated that locally heating the seal bonding material (91) results in conductive, or indirect, heating of the metal member (29) (Figure 19; p. 6, left column, lines 5-22). Therefore, since the reference locally heats the seal bonding material to 98°C (p. 5, right column, lines 1-3) to promote bonding, the reference teaches heating the member (29) to a temperature equal to or lower than 130°C and equal to or lower than a temperature at which the seal bonding material can perform bonding, while locally heating the seal bonding material.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Jessica L. Rossi** whose telephone number is **571-272-1223**. The examiner can normally be reached on M-F (8:00-5:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard D. Crispino can be reached on 571-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JESSICA ROSSI
PRIMARY EXAMINER